

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/18/10
Date Received: 06/02/10
Project: Alaskan Copper Works PO M125346, F&BI 006018
Date Extracted: 06/08/10
Date Analyzed: 06/10/10

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 47-140)
CB331707 006018-01	140 x	1,000	76
CB330001 006018-02	2,700 x	7,600	66
Method Blank 00-844 MB	<50	<250	76

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Analysis For Total Metals By EPA Method 200.8

Client ID:	CB331707	Client:	Landau Associates
Date Received:	06/02/10	Project:	Alaskan Copper Works, F&BI 006018
Date Extracted:	06/04/10	Lab ID:	006018-01
Date Analyzed:	06/04/10	Data File:	006018-01.029
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	109	60	125
Holmium	102	60	125

Analyte:	Concentration ug/L (ppb)
Copper	116
Zinc	666
Lead	4.86

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Analysis For Total Metals By EPA Method 200.8

Client ID:	CB330001	Client:	Landau Associates
Date Received:	06/02/10	Project:	Alaskan Copper Works, F&BI 006018
Date Extracted:	06/04/10	Lab ID:	006018-02
Date Analyzed:	06/04/10 14:50:56	Data File:	006018-02.030
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	108	60	125
Holmium	99	60	125

Analyte:	Concentration ug/L (ppb)
Copper	132
Zinc	119
Lead	16.7

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Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Landau Associates
Date Received:	NA	Project:	Alaskan Copper Works, F&BI 006018
Date Extracted:	06/04/10	Lab ID:	I0-279 mb
Date Analyzed:	06/04/10	Data File:	I0-279 mb.008
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	95	60	125
Holmium	98	60	125

Analyte:	Concentration ug/L (ppb)
Copper	<1
Zinc	<1
Lead	<1

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Date of Report: 06/18/10

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Project: Alaskan Copper Works PO M125346, F&BI 006018

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	85	96	61-133	12

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Date of Report: 06/18/10

Date Received: 06/02/10

Project: Alaskan Copper Works PO M125346, F&BI 006018

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 006006-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	2.99	98	91	50-144	7
Zinc	ug/L (ppb)	50	13.6	99 b	94 b	46-148	5
Lead	ug/L (ppb)	10	<1	97	93	76-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	109	66-134
Zinc	ug/L (ppb)	50	109	57-135
Lead	ug/L (ppb)	10	106	67-135

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Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.